Overview of Task 1 – Long-Term Fuel Price Forecasts

California Energy Commission

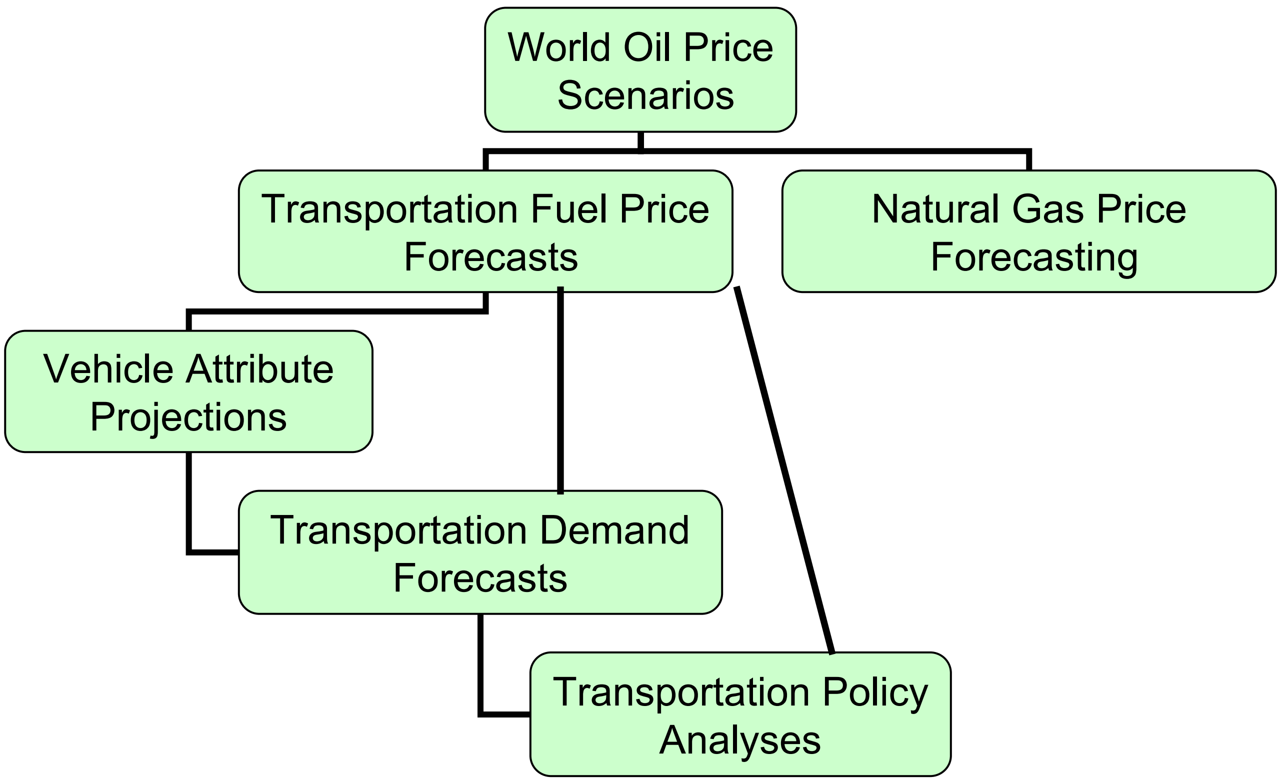
Staff Presentation

November 29, 2004

Objectives

- Approach and Methods
- Crude Oil and Fuel Price Projections
- Feedback

Flow of Information



Challenges & Conditions

- Great uncertainty in oil and fuels markets
- Requirement to be consistent with natural gas price forecasting
- Lack of in-house world energy model
- Analyses require single-point forecasts

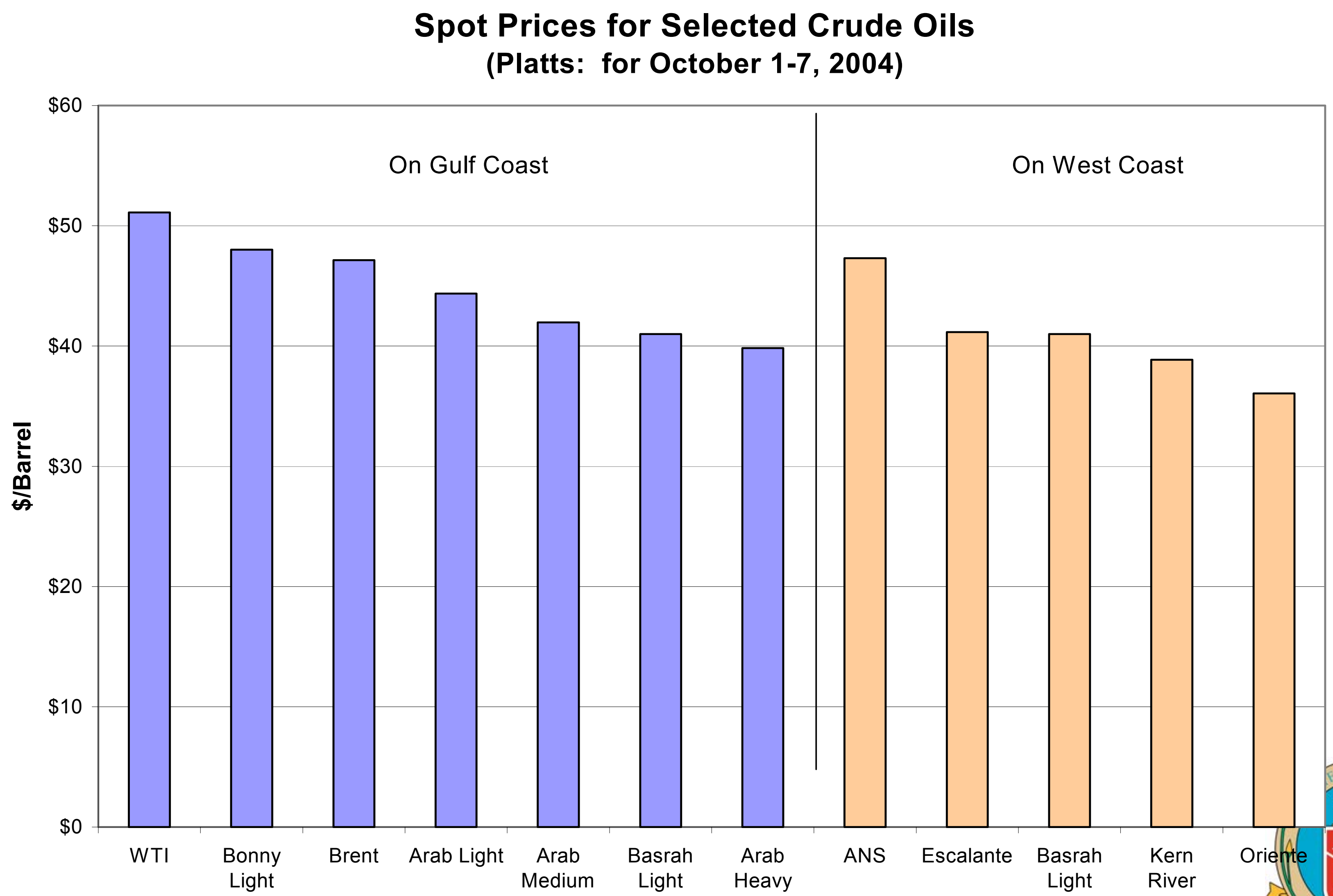
Approach

- Avoid a base case
- Develop petroleum price scenarios
  - Divergent, but plausible
  - Sustainable price levels
- Adapt US DOE oil price forecasts
- Use historical data on world oil and state fuel price relationships

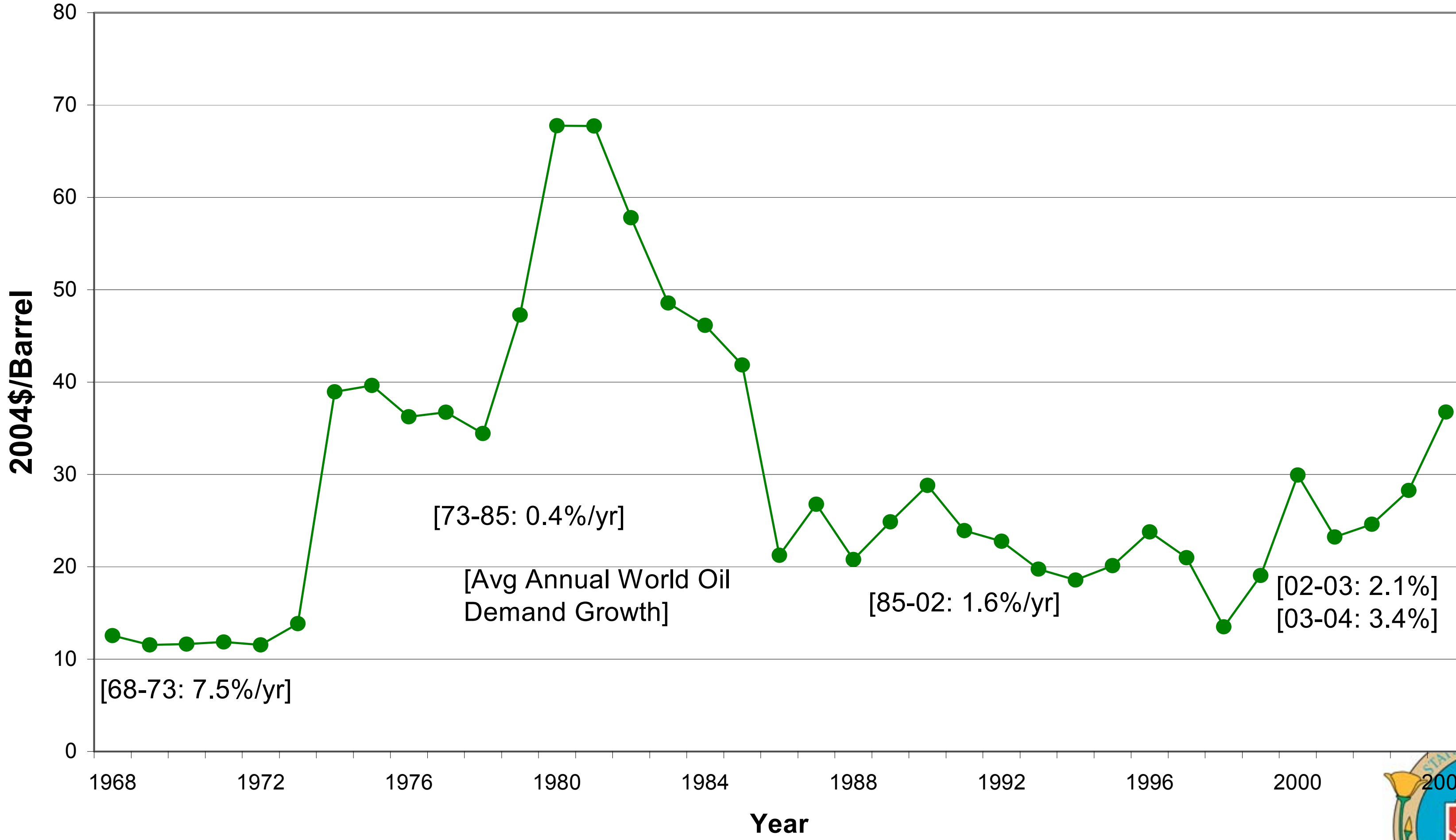
Basis for Scenarios

- What if recent high oil and fuel prices become the baseline for the future?
- Alternatively, what if prices decline to longer-term historical averages?
- No worst case scenarios considered at this time

Oil Price Indexes



US Refiner Acquisition Cost of Imported Crude Oil

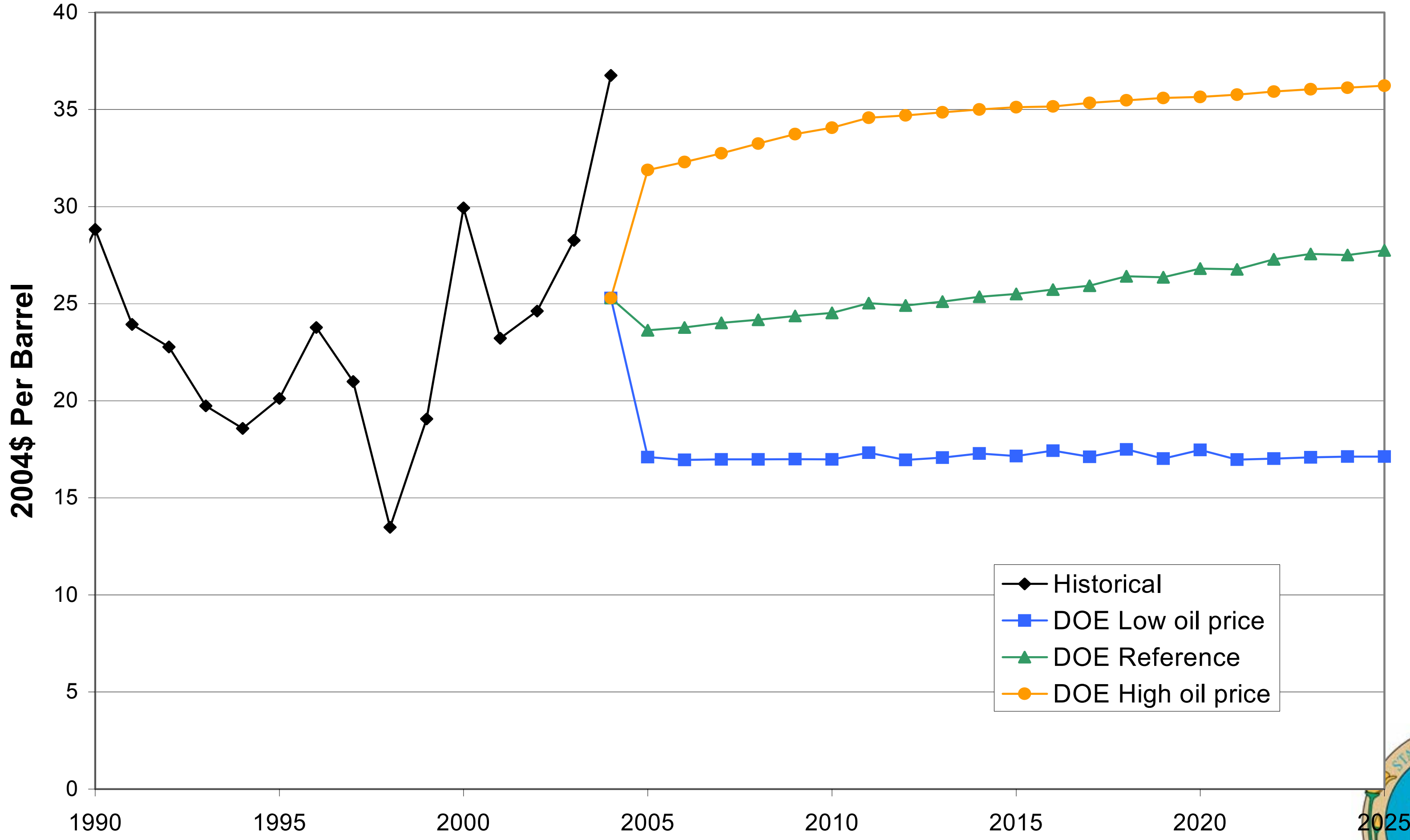


Recent Oil and Fuel Price Increases

- High world oil demand
- Constrained investment in production
- Low inventories
- Weather
- Geopolitics
- Dollar devaluation
- Tanker rates
- Refinery outages

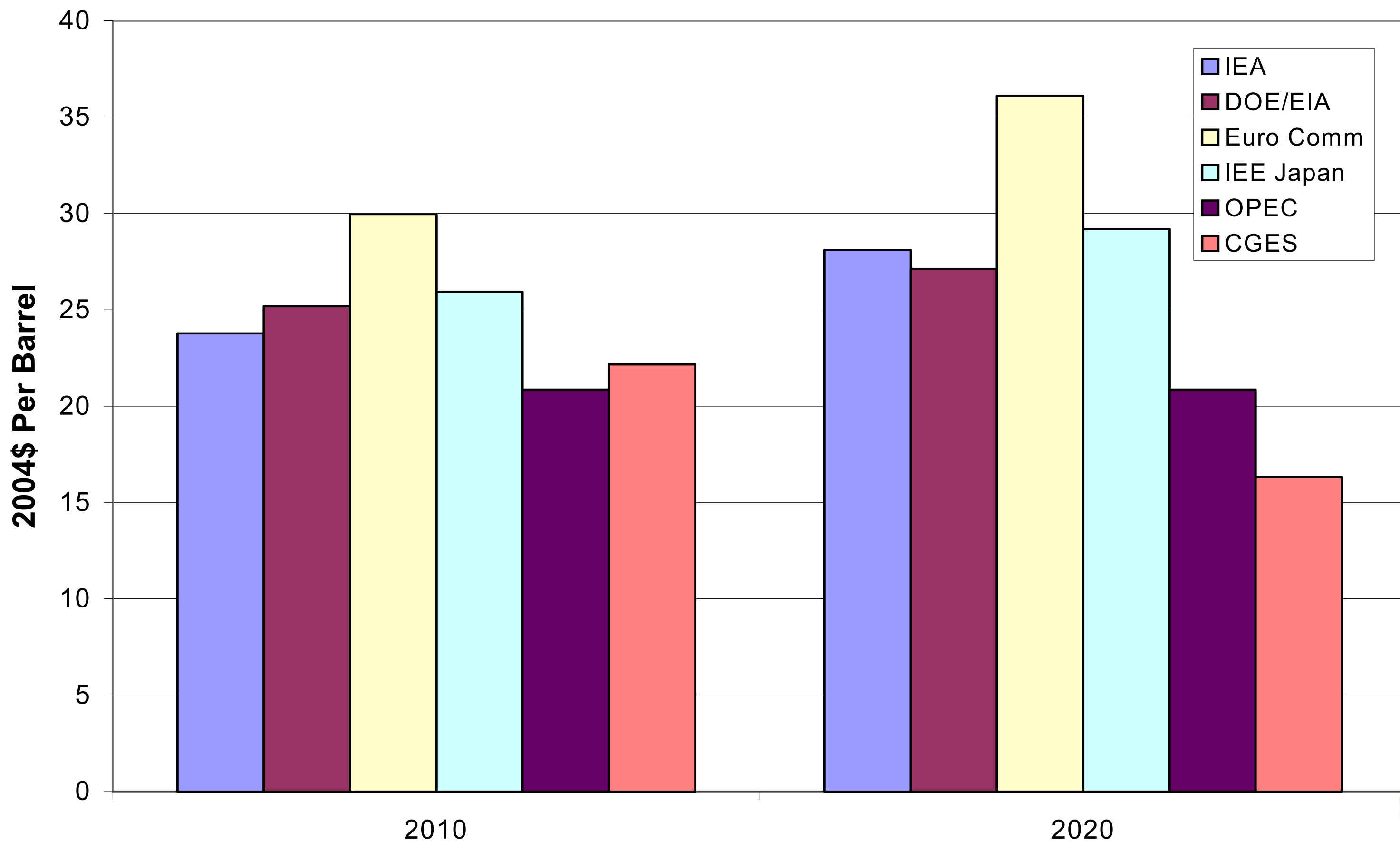
2004 DOE Oil Price Projections

(from DOE *2004 Annual Energy Outlook*)



Comparison of Oil Price Forecasts

(From IEA *2004 World Energy Outlook*)



Assumptions & Outputs from DOE Cases

(Avg annual rates for 2002-25; Market share & total mbd as of 2025)	**High Oil Price Case**		**Reference Case**	
Real GDP Growth (US & World)	3.0%	3.1%	3.0%	3.1%
US Energy Intensity (Btu/GDP)	-1.6%		-1.4%	
World Oil Consumption	1.5%	109.9 mbd	1.8%	117.9 mbd
US Oil Consumption	1.2%	25.6 mbd	1.6%	28.3 mbd
US Oil Production	-0.2%	8.8 mbd	-0.3%	8.6 mbd
World Conventional Oil Production	1.3%	103.1 mbd	1.7%	112.4 mbd
World Unconventional Oil Production	6.6%	6.7 mbd	5.3%	5.1 mbd
OPEC Market Share & Production	38%	42.2 mbd	46%	53.7 mbd
Non-OPEC Market Share & Prod'n	62%	67.6 mbd	54%	63.9 mbd

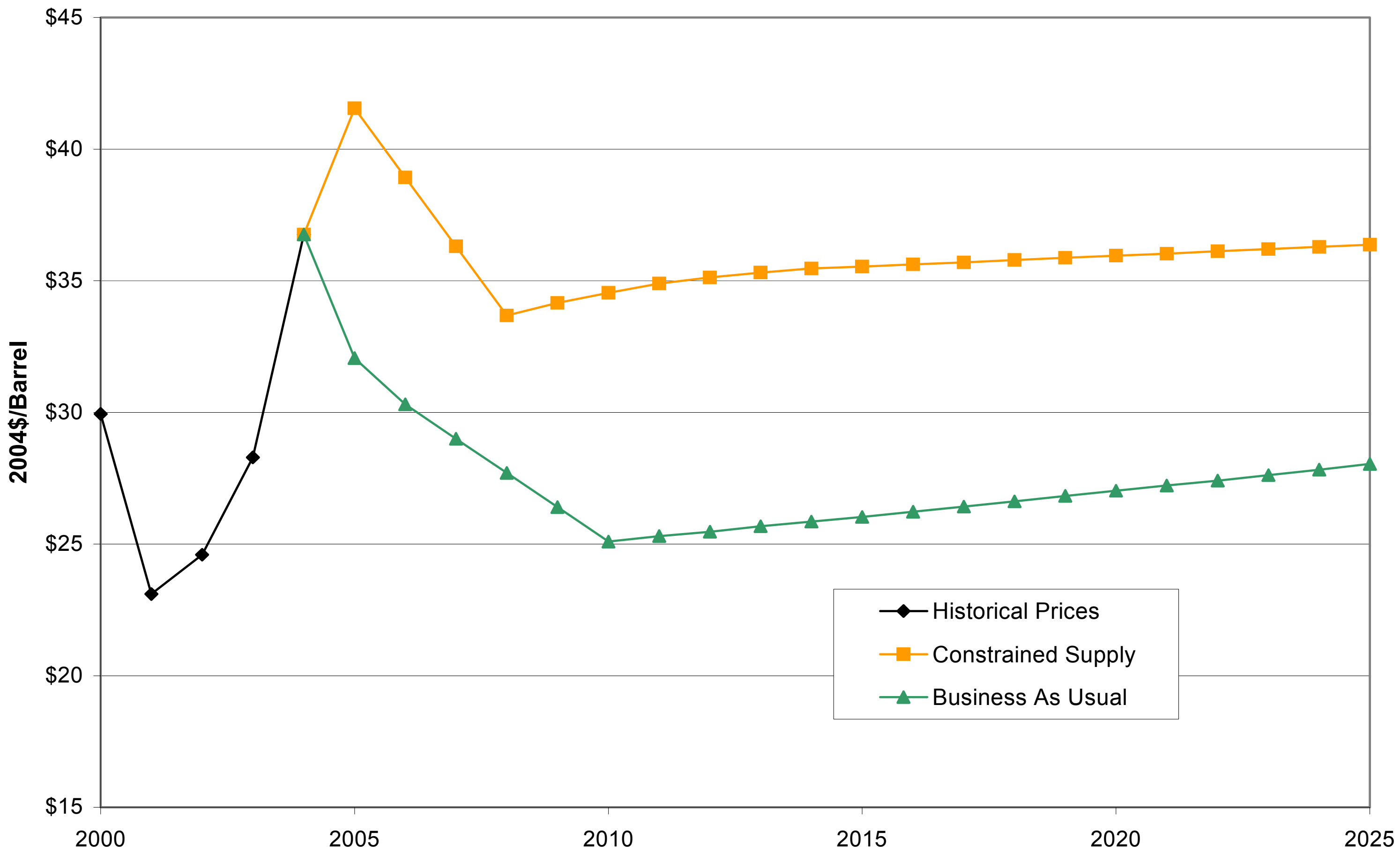
Price Scenarios

- Constrained Supply
  - DOE High Oil Price projections 2008-25
  - 2005 oil price from Nov. DOE Short Term Outlook
  - 2006-07 prices interpolated
  - Fuel price margins from 2003-04 data

Price Scenarios

- Business As Usual
  - DOE Reference Case oil prices 2010-25
  - 2005-06 based on average 2004 NY Mercantile Exchange Futures expectations
  - 2007-2009 oil prices interpolated
  - Fuel price margins from 2002-04 data

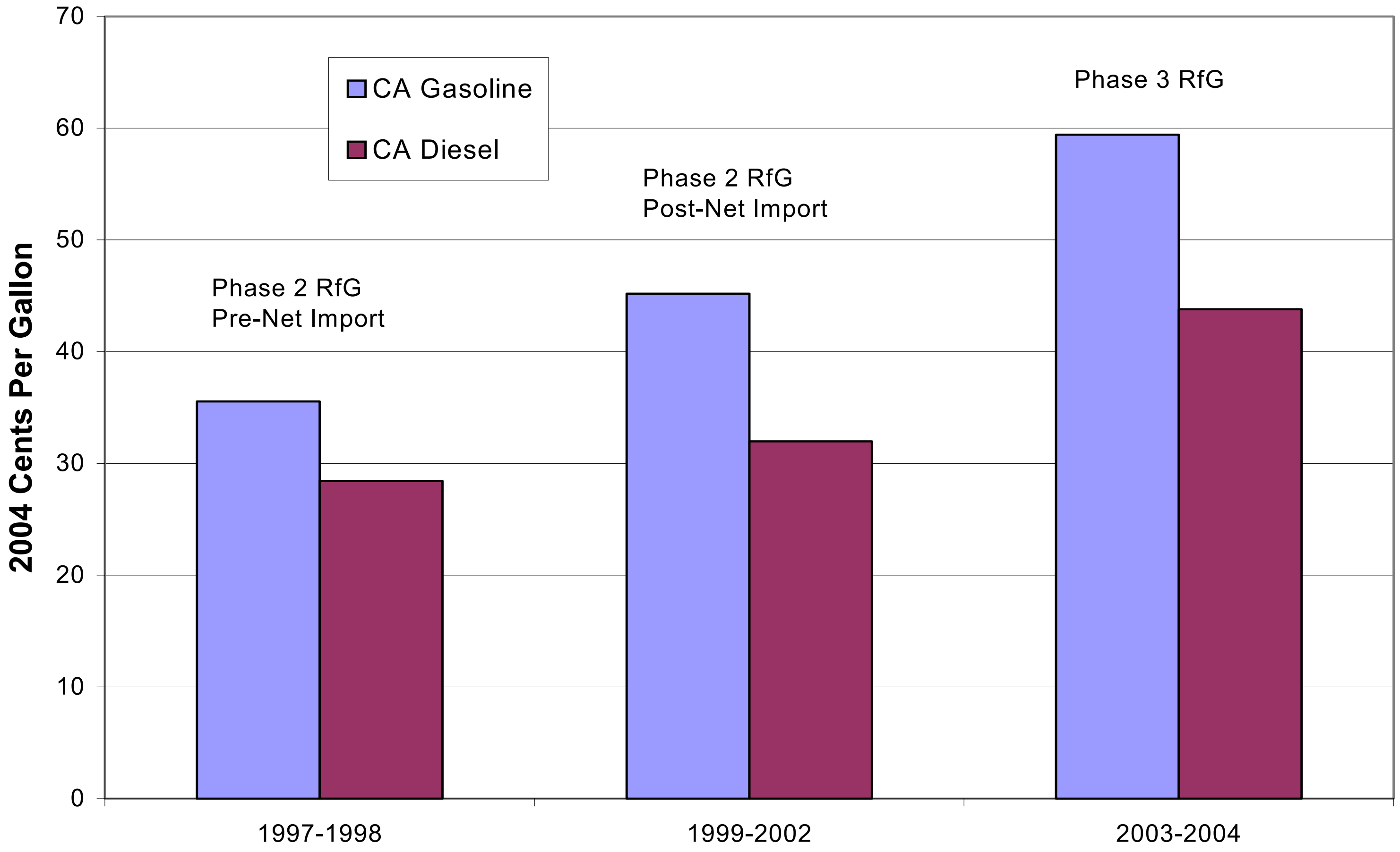
World Oil Price Scenarios



California Transportation Fuel Price Component Projections

Price Component	Constrained Supply (2003-04 Data)	Business As Usual (2002-04 Data)
Crude-to-Rack Margin	59.4 c/gal Gasoline 43.8 c/gal Diesel	53 c/gal Gasoline 37.1 c/gal Diesel
Rack-to-Retail (ex tax) Margin	18.7 c/gal Gasoline 16 c/gal Diesel	15.7 c/gal Gasoline 16 c/gal Diesel
Diesel Sulfur Reduction (2006 on)	5 c/gal Diesel	5 c/gal Diesel

Crude-to-Rack Price Margins



California Regular-Grade Gasoline & Diesel Price Projections